

In the Claims:

1. (original) A fluid loss control polymer additive comprising 2-acrylamido-2-methyl propane sulfonic acid, maleic acid, N-vinyl caprolactam and 4-hydroxybutyl vinyl ether.

2. (original) A cement composition comprising a hydraulic cement, sufficient water to form a pumpable slurry and a fluid loss control polymer additive that comprises 2-acrylamido-2-methyl propane sulfonic acid, maleic acid, N-vinyl caprolactam and 4-hydroxybutyl vinyl ether.

3. (original) The cement composition of claim 2 wherein the fluid loss control polymer additive is present in the cement composition in an amount in the range of from about 0.1% to about 2% by weight of cement in the composition.

4. (original) The cement composition of claim 2 wherein the water is present in an amount in the range of from about 35% to about 100% by weight of cement of the composition.

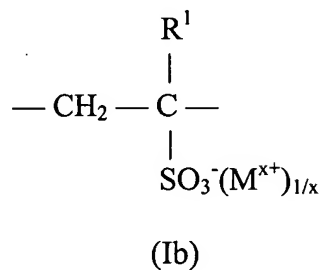
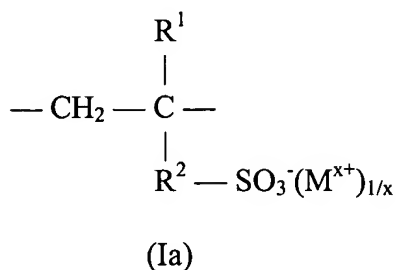
5. (canceled)

6. (canceled)

7. (canceled)

8. (original) A fluid loss control polymer additive comprising:

a) 5 to 93 weight % of monomers of the formula (Ia) or (Ib) or both



wherein

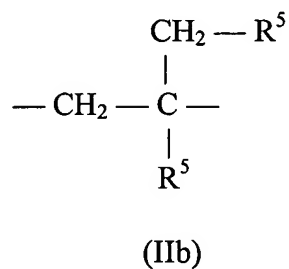
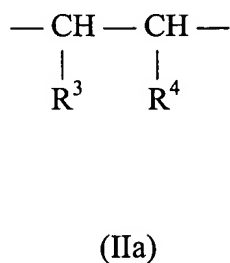
R¹ is hydrogen or C₁-C₅ alkyl,

R² is C₁-C₂₀ alkylene, carboxy C₁-C₂₀ alkylene, carboamido C₁-C₂₀ alkylene or phenylene,

M is hydrogen, ammonium or a metal cation in the oxidation state +I, +II or +III and

x is 1 to 3;

b) 1 to 50 weight % of monomers of the formula (IIa) or (IIb) or both



wherein

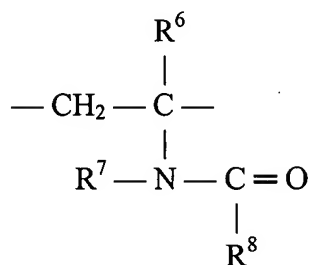
R³ and R⁴ are $-\text{COO}^-(\text{M}^{x+})_{1/x}$ or $-\text{C}(=\text{O})-\text{O}-\text{C}(=\text{O})-$,

R⁵ is $-\text{COO}^-(\text{M}^{x+})_{1/x}$,

M is hydrogen, ammonium or a metal cation in the oxidation state +I, +II or +III and

x is 1 to 3;

- c) 5 to 93 weight % of a monomer of the formula (III)



(III)

wherein

R^6 is hydrogen or $\text{C}_1\text{-C}_5$ alkyl,

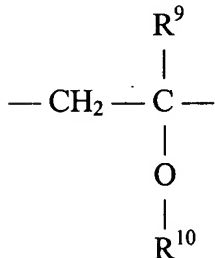
R^7 is hydrogen, $\text{C}_1\text{-C}_{10}$ alkyl or $-(\text{CH}_2)_y-$,

R^8 is hydrogen, $\text{C}_1\text{-C}_{10}$ alkyl or $-(\text{CH}_2)_y-$, and

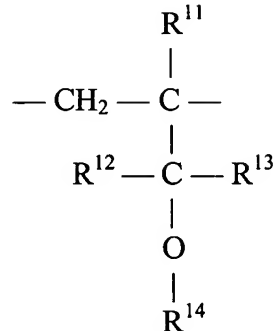
y is 3 to 7;

and

- d) 1 to 25 weight % of monomers of the formula (IVa) or (IVb) or both



(IVa)



(IVb)

wherein

R^9 is hydrogen or $\text{C}_1\text{-C}_5$ alkyl,

R^{10} is $\text{C}_1\text{-C}_{10}$ alkyl, $\text{C}_1\text{-C}_{10}$ aminoalkyl, $\text{C}_1\text{-C}_{20}$ hydroxyalkyl, $\text{C}_1\text{-C}_4$ alkyl or hydroxyl terminated mono- or poly- $\text{C}_2\text{-C}_3$ alkyleneoxy (with 1 to 400 alkyleneoxy units), $\text{C}_7\text{-C}_{20}$ alkylaryl, $\text{C}_7\text{-C}_{20}$ hydroxyalkylaryl, $\text{C}_6\text{-C}_{10}$ aryl or $\text{C}_6\text{-C}_{10}$ hydroxyaryl,

R^{11} is hydrogen or $\text{C}_1\text{-C}_5$ alkyl,

R¹² is hydrogen or C₁-C₅ alkyl,

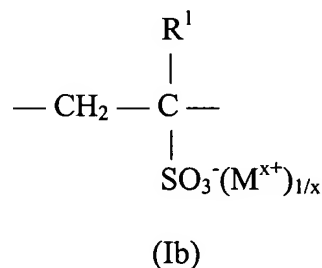
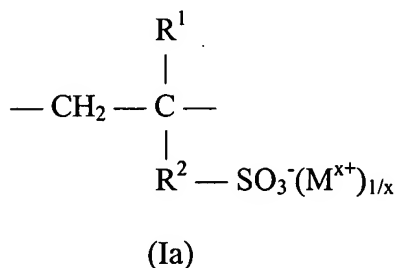
R¹³ is hydrogen or C₁-C₅ alkyl, and

R¹⁴ is hydrogen, C₁-C₂₀ alkyl, C₁-C₁₀ aminoalkyl, C₁-C₂₀ hydroxyalkyl, C₁-C₄ alkyl- or hydroxyl terminated mono- or poly-C₂-C₃ alkyleneoxy (with 1 to 400 alkyleneoxy units), C₇-C₂₀ alkylaryl, C₇-C₂₀ hydroxyalkylaryl, C₆-C₁₀ aryl, C₆-C₁₀ hydroxyaryl or with hydroxyl substituted C₁-C₂₀ alkylsulfonic acids and their ammonium, alkali metal or alkaline earth metal salts; and

wherein the monomers a) to d) add up to 100 weight %.

9. (original) A cement composition comprising a hydraulic cement, sufficient water to form a pumpable slurry and a fluid loss control polymer additive that comprises:

a) 5 to 93 weight % of monomers of the formula (Ia) or (Ib) or both



wherein

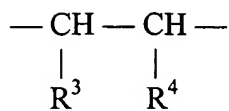
R¹ is hydrogen or C₁-C₅ alkyl,

R² is C₁-C₂₀ alkylene, carboxy C₁-C₂₀ alkylene, carboamido C₁-C₂₀ alkylene or phenylene,

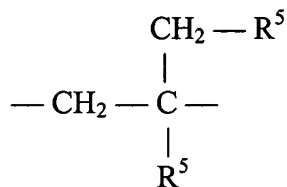
M is hydrogen, ammonium or a metal cation in the oxidation state +I, +II or +III and

x is 1 to 3;

- b) 1 to 50 weight % of monomers of the formula (IIa) or (IIb) or both

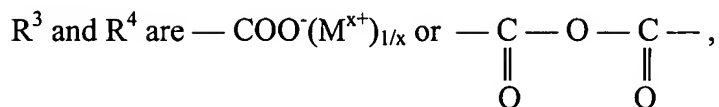


(IIa)



(IIb)

wherein



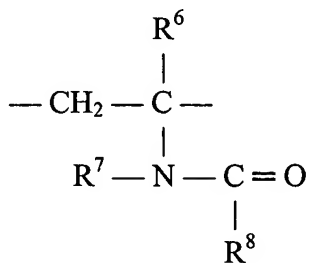
R^5 is $\text{--- COO}^-(\text{M}^{x+})_{1/x}$,

M is hydrogen, ammonium or a metal cation in the oxidation state +I, +II or +III

and

x is 1 to 3;

- c) 5 to 93 weight % of a monomer of the formula (III)



(III)

wherein

R^6 is hydrogen or $\text{C}_1\text{-C}_5$ alkyl,

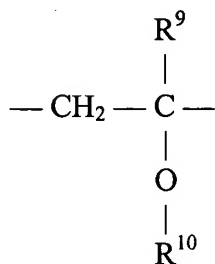
R^7 is hydrogen, $\text{C}_1\text{-C}_{10}$ alkyl or $\text{--- (CH}_2)_y \text{---}$,

R^8 is hydrogen, $\text{C}_1\text{-C}_{10}$ alkyl or $\text{--- (CH}_2)_y \text{---}$, and

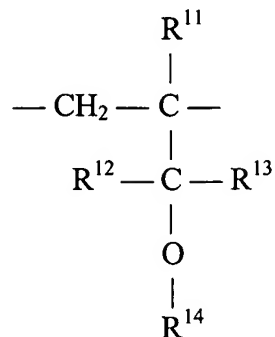
y is 3 to 7;

and

d) 1 to 25 weight % of monomers of the formula (IVa) or (IVb) or both



(IVa)



(IVb)

wherein

R^9 is hydrogen or $\text{C}_1\text{-C}_5$ alkyl,

R^{10} is $\text{C}_1\text{-C}_{10}$ alkyl, $\text{C}_1\text{-C}_{10}$ aminoalkyl, $\text{C}_1\text{-C}_{20}$ hydroxyalkyl, $\text{C}_1\text{-C}_4$ alkyl or hydroxyl terminated mono- or poly- $\text{C}_2\text{-C}_3$ alkyleneoxy (with 1 to 400 alkyleneoxy units), $\text{C}_7\text{-C}_{20}$ alkylaryl, $\text{C}_7\text{-C}_{20}$ hydroxyalkylaryl, $\text{C}_6\text{-C}_{10}$ aryl or $\text{C}_6\text{-C}_{10}$ hydroxyaryl,

R^{11} is hydrogen or $\text{C}_1\text{-C}_5$ alkyl,

R^{12} is hydrogen or $\text{C}_1\text{-C}_5$ alkyl,

R^{13} is hydrogen or $\text{C}_1\text{-C}_5$ alkyl, and

R^{14} is hydrogen, $\text{C}_1\text{-C}_{20}$ alkyl, $\text{C}_1\text{-C}_{10}$ aminoalkyl, $\text{C}_1\text{-C}_{20}$ hydroxyalkyl, $\text{C}_1\text{-C}_4$ alkyl- or hydroxyl terminated mono- or poly- $\text{C}_2\text{-C}_3$ alkyleneoxy (with 1 to 400 alkyleneoxy units), $\text{C}_7\text{-C}_{20}$ alkylaryl, $\text{C}_7\text{-C}_{20}$ hydroxyalkylaryl, $\text{C}_6\text{-C}_{10}$ aryl, $\text{C}_6\text{-C}_{10}$ hydroxyaryl or with hydroxyl substituted $\text{C}_1\text{-C}_{20}$ alkylsulfonic acids and their ammonium, alkali metal or alkaline earth metal salts; and

wherein the monomers a) to d) add up to 100 weight %.

10. (original) The cement composition of claim 9 wherein the fluid loss control polymer additive is present in the cement composition in an amount in the range of from about 0.1% to about 2% by weight of cement in the composition.

11. (original) The cement composition of claim 9 wherein the hydraulic cement is selected from the group consisting of Portland cements, pozzolana cements, gypsum cements, aluminous cements and silica cements.

12. (original) The cement composition of claim 9 wherein the hydraulic cement is Portland cement.

13. (original) The cement composition of claim 9 wherein the water is selected from the group consisting of fresh water and salt water.

14. (original) The cement composition of claim 9 wherein the water is present in an amount in the range of from about 35% to about 100% by weight of cement of the composition.

15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled).

19. (canceled)

20. (canceled)

21. (original) A fluid loss control polymer additive comprising 69 weight % of the calcium salt of 2-acrylamido-2-methyl propane sulfonic acid, 14 weight % of the calcium salt of maleic acid, 14 weight % of N-vinyl caprolactam and 3 weight % of 4-hydroxybutyl vinyl ether.

22. (original) A cement composition comprising a hydraulic cement, sufficient water to form a pumpable slurry and a fluid loss control polymer additive that comprises 69 weight % of the calcium salt of 2-acrylamido-2-methyl propane sulfonic acid, 14 weight % of the calcium salt of maleic acid, 14 weight % of N-vinyl caprolactam and 3 weight % of 4-hydroxybutyl vinyl ether.

23. (original) The cement composition of claim 22 wherein the fluid loss control polymer additive is present in the cement composition in an amount in the range of from about 0.1% to about 2% by weight of cement in the composition.

24. (original) The cement composition of claim 22 wherein the hydraulic cement is selected from the group consisting of Portland cements, pozzolana cements, gypsum cements, aluminous cements and silica cements.

25. (original) The cement composition of claim 22 wherein the hydraulic cement is Portland cement.

26. (original) The cement composition of claim 22 wherein the water is selected from the group consisting of fresh water and salt water.

27. (original) The cement composition of claim 22 wherein the water is present in an amount in the range of from about 35% to about 100% by weight of cement of the composition.

28. (canceled)

29. (canceled)

30. (canceled)

31. (canceled)

32. (canceled)

33. (canceled)